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* * * * * STN Columbus * * * * *

FILE 'HOME' ENTERED AT 12:40:54 ON 02 SEP 2000

=> file medline caplus

| COST IN U.S. DOLLARS | SINCE FILE ENTRY | TOTAL SESSION |
|----------------------|------------------|---------------|
| FULL ESTIMATED COST | 0.15 | 0.15 |

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=> s malted cereal?

L1 11 MALTED CEREAL?

=> s barley malt

L2 854 BARLEY MALT

=> s wheat malt

L3 67 WHEAT MALT

=> s malted wheat

L4 25 MALTED WHEAT

=> s l1 or l2 or l3 or l4

L5 937 L1 OR L2 OR L3 OR L4

=> s antisecretory (w) protein?

L6 18 ANTISECRETORY (W) PROTEIN?

=> s l6 and l5

L7 1 L6 AND L5

=> d iall

L7 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1998:229583 CAPLUS

DOCUMENT NUMBER: 128:229665

TITLE: Foodstuffs made from **malted cereals**
which when consumed can induce **antisecretory**
proteins

INVENTOR(S): Goeransson, Leif; Lange, Stefan; Loennroth, Ivar

PATENT ASSIGNEE(S): Svenska Lantmaennen Riksfoerbund Ek Foer, Swed.

SOURCE: Swed., 8 pp.

CODEN: SSXXAY

DOCUMENT TYPE: Patent

LANGUAGE: Swedish

INT. PATENT CLASSIF.:

MAIN: A23K001-16

SECONDARY: A23K001-165; A23L001-10; A23L001-185

CLASSIFICATION: 17-11 (Food and Feed Chemistry)

Section cross-reference(s): 1, 63

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------|------|-------|-----------------|-------|
| ----- | ---- | ----- | ----- | ----- |

| | | | | |
|---|----|----------|----------------|----------|
| SE 506486 | C2 | 19971222 | SE 1996-4251 | 19961120 |
| SE 9604251 | A | 19971222 | | |
| WO 9821978 | A1 | 19980528 | WO 1997-SE1918 | 19971114 |
| W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | | |
| RW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG | | | | |
| AU 9850771 | A1 | 19980610 | AU 1998-50771 | 19971114 |
| AU 719051 | B2 | 20000504 | | |
| EP 942660 | A1 | 19990922 | EP 1997-913633 | 19971114 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, LT, LV, FI | | | | |
| NO 9902411 | A | 19990520 | NO 1999-2411 | 19990520 |
| PRIORITY APPLN. INFO.: | | | SE 1996-4251 | 19961120 |
| | | | WO 1997-SE1918 | 19971114 |

ABSTRACT:

Products are disclosed which have enzymic activity for prodn. of foodstuffs, including fodder, which after consumption can induce **antisecretory** ***proteins***, as well as foodstuffs produced in this manner. Products with enzymic activity can be, e.g., **malted cereals**. These products can be used to prevent excessive gastroenteric secretion and loss of electrolytes.

SUPPL. TERM: antidiarrheal foodstuff **malted cereal**
antisecretory

INDEX TERM: Proteins (specific proteins and subclasses)
ROLE: BPN (Biosynthetic preparation); FFD (Food or feed use); PEP (Physical, engineering or chemical process); BIOL (Biological study); PREP (Preparation); PROC (Process);

USES
(Uses)
(antisecretory; foodstuffs made from **malted cereals** which when consumed can induce **antisecretory proteins**)

INDEX TERM: Breakfast cereal
(flakes; foodstuffs made from **malted cereals** which when consumed can induce **antisecretory proteins**)

INDEX TERM: Antidiarrheals
Barley
Bread
Cereal (grain)
Corn
Fodder
Malt
Oat
Pasta
Rye
Sorghum
Wheat
(foodstuffs made from **malted cereals** which when consumed can induce **antisecretory proteins**)

INDEX TERM: Enzymes, biological studies
ROLE: BPN (Biosynthetic preparation); FFD (Food or feed use); PEP (Physical, engineering or chemical process); THU

(Therapeutic use); BIOL (Biological study); PREP
 (Preparation); PROC (Process); USES (Uses)
 (foodstuffs made from **malted cereals**
 which when consumed can induce **antisecretory**
proteins)

INDEX TERM: Secretion (process)
 (gastrointestinal; foodstuffs made from **malted**
cereals which when consumed can induce
antisecretory proteins)

INDEX TERM: Dehydration (physiological)
 (inhibitors; foodstuffs made from **malted**
cereals which when consumed can induce
antisecretory proteins)

INDEX TERM: Bakery products
 (rolls; foodstuffs made from **malted**
cereals which when consumed can induce
antisecretory proteins)

=> s secretion

L8 385974 SECRETION

=> d hist

(FILE 'HOME' ENTERED AT 12:40:54 ON 02 SEP 2000)

FILE 'MEDLINE, CAPLUS' ENTERED AT 12:41:07 ON 02 SEP 2000

L1 11 S MALTED CEREAL?
 L2 854 S BARLEY MALT
 L3 67 S WHEAT MALT
 L4 25 S MALTED WHEAT
 L5 937 S L1 OR L2 OR L3 OR L4
 L6 18 S ANTISECRETORY (W) PROTEIN?
 L7 1 S L6 AND L5
 L8 385974 S SECRETION

=> s l8 and l5

L9 4 L8 AND L5

=> d ibib abs 1-4

L9 ANSWER 1 OF 4 MEDLINE
 ACCESSION NUMBER: 95169365 MEDLINE
 DOCUMENT NUMBER: 95169365
 TITLE: Purification of secreted alpha-amylases by immunoaffinity
 chromatography with cross-reactive antibody.
 AUTHOR: Katoh S; Terashima M
 CORPORATE SOURCE: Department of Synthetic Chemistry and Biological
 Chemistry,
 Kyoto University, Japan..
 SOURCE: APPLIED MICROBIOLOGY AND BIOTECHNOLOGY, (1994 Oct) 42 (1)
 36-9.
 Journal code: AMC. ISSN: 0175-7598.
 PUB. COUNTRY: GERMANY: Germany, Federal Republic of
 Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: B

ENTRY MONTH: 199506

AB Two isozymes of rice alpha-amylases expressed and secreted by recombinant yeast were purified by immunoaffinity chromatography by using cross-reactive antibody. Antibodies raised against partially purified barley alpha-amylase adsorbed rice alpha-amylases in fermentation broth by

a cross-reaction. By use of these antibodies as ligands, rice alpha-amylases were concentrated and purified to a high degree in one-step

immunoaffinity chromatography. Because of the differences in the contaminating impurities between the barley alpha-amylase (antigen) from **barley malt** and rice alpha-amylases (target protein) secreted from yeast, the high purity of eluted alpha-amylases was attained

without the use of highly purified antigen for immunization. Utilization of cross-reactive antibodies in immunoaffinity chromatography is useful for the purification of recombinant proteins in the absence of a sufficient amount and high enough purity of the target proteins to be purified.

L9 ANSWER 2 OF 4 MEDLINE

ACCESSION NUMBER: 93366170 MEDLINE

DOCUMENT NUMBER: 93366170

TITLE: Comparison of **barley malt** alpha-amylase isozymes 1 and 2: construction of cDNA hybrids by in vivo recombination and their expression in yeast.

AUTHOR: Juge N; Sogaard M; Chaix J C; Martin-Eauclaire M F; Svensson B; Marchis-Mouren G; Guo X J

CORPORATE SOURCE: Laboratoire BBMN, Faculte des Sciences et Techniques de Saint-Jerome, Universite d'Aix-Marseille III, France..

SOURCE: GENE, (1993 Aug 25) 130 (2) 159-66.

Journal code: FOP. ISSN: 0378-1119.

PUB. COUNTRY: Netherlands

Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 199312

AB Germinating barley produces two alpha-amylase isozymes, AMY1 and AMY2, having 80% amino acid (aa) sequence identity and differing with respect to

a number of functional properties. Recombinant AMY1 (re-AMY1) and AMY2 (re-AMY2) are produced in yeast, but whereas all re-AMY1 is secreted, re-AMY2 accumulates within the cell and only traces are secreted.

Expression of AMY1::AMY2 hybrid cDNAs may provide a means of understanding

the difference in **secretion** efficiency between the two isozymes. Here, the efficient homologous recombination system of the yeast, *Saccharomyces cerevisiae*, was used to generate hybrids of barley AMY with the N-terminal portion derived from AMY1, including the signal peptide (SP), and the C-terminal portion from AMY2. Hybrid cDNAs were thus generated that encode either the SP alone, or the SP followed by the N-terminal 21, 26, 53, 67 or 90 aa from AMY1 and the complementary C-terminal sequences from AMY2. Larger amounts of re-AMY are secreted by hybrids containing, in addition to the SP, 53 or more aa of AMY1. In contrast, only traces of re-AMY are secreted for hybrids having 26 or fewer aa of AMY1. In this case, re-AMY hybrid accumulates intracellularly.

Transformants secreting hybrid enzymes also accumulated some re-AMY within

the cell. The AMY1 SP, therefore, does not ensure re-AMY2 **secretion** and a certain portion of the N-terminal sequence of AMY1

is required for **secretion** of a re-AMY1::AMY2 hybrid.

L9 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1998:229583 CAPLUS
DOCUMENT NUMBER: 128:229665
TITLE: Foodstuffs made from **malted cereals**
which when consumed can induce antisecretory proteins
INVENTOR(S): Goeransson, Leif; Lange, Stefan; Loennroth, Ivar
PATENT ASSIGNEE(S): Svenska Lantmaennen Riksfoerbund Ek Foer, Swed.
SOURCE: Swed., 8 pp.
CODEN: SSXXAY
DOCUMENT TYPE: Patent
LANGUAGE: Swedish
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|--|----------|-----------------|----------|
| SE 506486 | C2 | 19971222 | SE 1996-4251 | 19961120 |
| SE 9604251 | A | 19971222 | | |
| WO 9821978 | A1 | 19980528 | WO 1997-SE1918 | 19971114 |
| W: | AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | |
| RW: | GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG | | | |
| AU 9850771 | A1 | 19980610 | AU 1998-50771 | 19971114 |
| AU 719051 | B2 | 20000504 | | |
| EP 942660 | A1 | 19990922 | EP 1997-913633 | 19971114 |
| R: | AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, LT, LV, FI | | | |
| NO 9902411 | A | 19990520 | NO 1999-2411 | 19990520 |
| PRIORITY APPLN. INFO.: | | | SE 1996-4251 | 19961120 |
| | | | WO 1997-SE1918 | 19971114 |

AB Products are disclosed which have enzymic activity for prodn. of foodstuffs, including fodder, which after consumption can induce antisecretory proteins, as well as foodstuffs produced in this manner. Products with enzymic activity can be, e.g., **malted cereals**. These products can be used to prevent excessive gastroenteric **secretion** and loss of electrolytes.

L9 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1993:620510 CAPLUS
DOCUMENT NUMBER: 119:220510
TITLE: Comparison of **barley malt**
.alpha.-amylase isozymes 1 and 2: Construction of
cdNA
hybrids by in vivo recombination and their expression
in yeast
AUTHOR(S): Juge, Nathalie; Soegaard, Morten; Chaix, Jean Claude;
Martin-Eauclaire, Marie France; Svensson, Birte;
Marchis-Mouren, Guy; Guo, Xiao Jun
CORPORATE SOURCE: Fac. Sci. Tech. St.-Jerome, Univ. Aix-Marseille III,
Marseille, 13397, Fr.
SOURCE: Gene (1993), 130(2), 159-66
CODEN: GENED6; ISSN: 0378-1119
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Germinating barley produces two .alpha.-amylase isoenzymes, AMY1 and AMY2, having 80% amino acid (aa) sequence identity and differing with respect to a no. of functional properties. Recombinant AMY1 (re-AMY1) and AMY2 (re-AMY2) are produced in yeast, but whereas all re-AMY1 is secreted, re-AMY2 accumulates within the cell and only traces are secreted. Expression of AMY1::AMY2 hybrid cDNAs may provide a means of understanding the difference in **secretion** efficiency between the two isoenzymes. Here, the efficient homologous recombination system of the yeast, *Saccharomyces cerevisiae*, was used to generate hybrids of barley AMY with the N-terminal portion derived from AMY1, including the signal peptide (SP), and the C-terminal portion from AMY2. Hybrid cDNAs were thus generated that encode either the SP alone, or the SP followed by the N-terminal 21, 26, 53, 67 or 90 aa from AMY1 and the complementary C-terminal sequences from AMY2. Larger amts. of re-AMY are secreted by hybrids contg., in addn. to the SP, 53 or more aa of AMY1. In contrast, only traces of re-AMY are secreted for hybrids having 26 or fewer aa of AMY1. In this case, re-AMY hybrid accumulates intracellularly. Transformants secreting hybrid enzymes also accumulated some re-AMY within the cell. The AMY1 SP, therefore, does not ensure re-AMY2 **secretion** and a certain portion of the N-terminal sequence of AMY1 is required for **secretion** of a re-AMY1::AMY2 hybrid.

=> log y

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| COST IN U.S. DOLLARS | SINCE FILE | TOTAL |
| | ENTRY | SESSION |
| FULL ESTIMATED COST | 26.39 | 26.54 |
| DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS) | SINCE FILE | TOTAL |
| | ENTRY | SESSION |
| CA SUBSCRIBER PRICE | -1.67 | -1.67 |

STN INTERNATIONAL LOGOFF AT 12:47:20 ON 02 SEP 2000

L9 ANSWER 2 OF 5 FSTA COPYRIGHT 2001 IFIS

ACCESSION NUMBER: 92(01):M0114 FSTA FS FSTA

TITLE: [Amino acid composition and biological value of protein-enriched biscuits.]

AUTHOR: Voronetskene, V. I.; Mikalauskaite, D. A.

CORPORATE SOURCE: Lab. Ratsional'nogo Pitaniya Cheloveka, Vil'nyuskii Univ., Vilnius, USSR

SOURCE: Voprosy Pitaniya, (1991) No. 2, 54-57, 6 ref.
ISSN: 0042-8833.

DOCUMENT TYPE: Journal

LANGUAGE: Russian SL English

AB Amino acid (AA) composition and AA score were studied for 5 brands of biscuits enriched with 5.8-8.7 g/100 g dried milk products

(skim milk or buttermilk) or with 0.6-6.2 g/100 g soy flour. Biological value of the biscuits was also calculated from the sum of essential AA; ratio of essential AA to total N; AA score; and coeff. of variation for

AA score. Results (tabulated) showed that biscuits enriched with dried skim milk or dried buttermilk tended to contain more lysine (2.67-3.11 g/100 g) than those enriched with soy flour (1.43-2.33 g/100

g) and had an improved AA balance as indicated by the lower coeff. of variation for AA score (31-41 vs. 47-52). Comparison of another brand of biscuits enriched with whey concentrate (11.7 g/100 g) or malted barley (5% flour replacement) showed that enrichment with malted barley (obtained as a by-product from the brewing industry) increased lysine content from 1.18 to 1.58 g/100 g and essential AA:N ratio from 1.39 to 1.49. (ALR)

L4 ANSWER 6 OF 7 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1964:41993 CAPLUS

DOCUMENT NUMBER: 60:41993

ORIGINAL REFERENCE NO.: 60:7410d-f

TITLE: Quantitative changes in **free amino acids** during malting of two barley varieties

AUTHOR(S): Robbins, G. S.; Chesters, Joan; Dickson, A. D.

CORPORATE SOURCE: U.S. Dept. of Agr., Madison, WI

SOURCE: Am. Soc. Brewing Chemists (1963) 141-8

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB Changes in **free amino acids** during malting were studied with particular emphasis on the interaction of growth time, drying treatment, and barley variety. Atlas and Kindred varieties were chosen for the investigation since these varieties might exhibit appreciable differences in **free amino acid** levels. Chem. analysis of the barleys is given. Stainless steel, screen-bottomed cans were used to contain 225 g. (dry basis) barley throughout the malting process. The barley was steeped in tapwater,

which was changed twice daily. Temp. during steeping was maintained at 16.degree.. Air circulating through the germinating samples was held at 93% relative humidity. Half of each malting sample was immediately

freeze dried, and half was stored in dry ice. At the end of the entire malting period, all stored samples were kiln-dried together with electrically heated air at different periods of time. Samples were ground in a Wiley mill and enzymes inactivated and extn. of amino acids conducted by the method of Hunter, et al. (CA 49, 11063e). Amino acids were detd. by the method of Moore, et al. (CA 52, 15347f). It was found that time of germination produced the greatest change in total **free amino acids**. Influence of kiln drying compared with freeze-drying was a little less, however, kilning resulted in the most selective variation in certain amino acids. Data suggested the possibility of important correlations between **free amino acids** in **malting barleys** and processing factors used to evaluate processing performance.

L4 ANSWER 7 OF 7 CAPLUS COPYRIGHT 2002 ACS

cited

L9 ANSWER 5 OF 5 CAPLUS COPYRIGHT 2001 ACS DUPLICATE 1
ACCESSION NUMBER: 1972:111657 CAPLUS
DOCUMENT NUMBER: 76:111657
TITLE: **Amino acid** composition of
malted cereals and malt sprouts
AUTHOR(S): Robbins, G. S.; Pomeranz, Y.
CORPORATE SOURCE: Barley Malt Lab., U. S. Dep. Agric., Madison, Wis.,
USA
SOURCE: Amer. Soc. Brew. Chem., Proc. (1971) 15-21
CODEN: ASBCA3
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Crude protein and **amino acid** compns. were detd. in
barley, wheat, oats, rye, and tricale, and also in 5-day malts and in
malt sprouts. There was a fairly uniform pattern of changes in **amino
acid** compn. of the 5 cereal species during malting. The most
notable feature of the sprout proteins was their consistently high
lysine, a limiting **amino acid** in practically
all cereal grains. The sprouts contained 1.3-2.1-fold as much protein as
the malts. The proteins of the malts contained more **lysine**,
arginine, aspartic acid, alanine, valine, isoleucine, and leucine, and
less ammonia and glutamic acid, than the unmalted cereals.

cited

L11 ANSWER 28 OF 28 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1956:30292 CAPLUS

DOCUMENT NUMBER: 50:30292

ORIGINAL REFERENCE NO.: 50:6078c-e

TITLE: Constitution of a modified starch from **malted barley**

AUTHOR(S): Aspinall, G. O.; Hirst, E. L.; McArthur, W.

CORPORATE SOURCE: Univ. Edinburgh, UK

SOURCE: J. Chem. Soc. (1955) 3075-81

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB A starch isolated from **malted barley** contained 26% amylose as detd. by potentiometric iodine titration. This is higher than that found in the starch from the unmalted barley. The starch was fractionated into amylose and amylopectin by the method of Higgenbottom and Morrison (C.A. 43, 5615h). Methylation showed that the amylose consisted of unbranched chains with an av. of about 330 **glucose** residues. Methylation end-group assay, supported by amylolysis and periodate oxidation, indicated the amylopectin contained the normal type of branched structure but with one nonreducing end group per 18 \pm 1 **glucose** residues instead of the 26 found in the starch of unmalted barley. It is concluded that during the malting of barley the amylopectin has undergone enzymic attack causing shortening of the outer chains but with retention of the branched structure, while the amylose component has been relatively little degraded.

(FILE 'HOME' ENTERED AT 12:40:54 ON 02 SEP 2000)

FILE 'MEDLINE, CAPLUS' ENTERED AT 12:41:07 ON 02 SEP 2000

L1 11 S MALTED CEREAL?
L2 854 S BARLEY MALT
L3 67 S WHEAT MALT
L4 25 S MALTED WHEAT
L5 937 S L1 OR L2 OR L3 OR L4
L6 18 S ANTISECRETORY (W) PROTEIN?
L7 1 S L6 AND L5
L8 385974 S SECRETION

=> s 18 and .15

L9 4 L8 AND L5